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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/601,654	06/24/2003	Masaya Tamaru	0649-0895P	1294

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EXAMINER

MADDEN, GREGORY VINCENT

ART UNIT	PAPER NUMBER
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2622

NOTIFICATION DATE	DELIVERY MODE
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11/05/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/601,654	Applicant(s) TAMARU ET AL.	
	Examiner Gregory V. Madden	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 9-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,6 and 18-27 is/are rejected.
- 7) ☒ Claim(s) 3,4,7 and 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 15, 2007 has been entered.

Response to Arguments

Applicant's arguments with respect to claim 1, 2, 5, and 6 have been considered but are moot in view of the new ground(s) of rejection.

In regard to independent claims 1 and 5, the Applicant argues that the Ikeda reference (U.S. Pat. 6,204,881) fails to teach that the combined data is multiplied by a total gain that depends on the scene. The Applicant points out that Ikeda teaches that the image data I and image data II are multiplied by a gain before being combined, and thus Ikeda does not teach that the combined data itself is multiplied by a total gain (See Remarks, Pg. 9). However, without conceding to the Applicant's reasoning in view of Ikeda, the Applicant's arguments are considered moot in view of Ogata et al. (U.S. Pat. 7,202,892). As will be set forth in further detail below, the Examiner believes that Ogata teaches the limitations of newly-amended claims 1 and 5, as well as dependent claims 2 and 6. Please refer to the detailed rejections to the claims below.

Finally, it is noted that the Applicant has added dependent claims 18-27. Please refer to the rejection of these claims, also set forth below.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 5, 6, 21, 22, 26, and 27 are rejected under 35 U.S.C. 102(e) as being anticipated by Ogata et al. (U.S. Pat. 7,202,892).

First, considering **claim 1**, the Ogata reference teaches an image combination method comprising the steps of image-combining high output (i.e. long-time exposure image xL) and low output (i.e. short-time exposure image xS) image data to form combined image data (via image synthesizer 13), and multiplying the combined data of the high output image data and the low output image data by a total gain (i.e. compensation factor cE via level compensator 32) that depends on a scene. Please refer to Col. 14, Line 49 – Col. 16, Line 38 and Fig. 20.

As for **claim 2**, the limitations of claim 1 are taught above, and Ogata also teaches that the total gain (cE) is multiplied on the combined data of high output image data (i.e. long-time exposure) and the low output image data (i.e. short-time exposure) in a range that the high output image data exceeds a certain value. See Col. 15, Line 46 – Col. 16, Line 8.

Next, in regard to **claim 5**, the Ogata reference teaches an image pickup apparatus comprising an image-combining means for image combining a high output (i.e. long-time exposure image xL) and low output (i.e. short-time exposure image xS) image data to form combined image data (via image synthesizer 13), and multiplying means for multiplying the combined data of the high output image data

Art Unit: 2622

and the low output image data by a total gain (i.e. compensation factor cE via level compensator 32) that depends on a scene. Please refer to Col. 14, Line 49 – Col. 16, Line 38 and Fig. 20.

As for **claim 6**, the limitations of claim 5 are taught above, and Ogata also teaches that the total gain (cE) is multiplied on the combined data of high output image data (i.e. long-time exposure) and the low output image data (i.e. short-time exposure) in a range that the high output image data exceeds a certain value. See Col. 15, Line 46 – Col. 16, Line 8.

Considering **claim 21**, the limitations of claim 1 are set forth above, and Ogata discloses that the step of image-combining the high output image data (i.e. long-time exposure image xL) and the low output image data (i.e. short-time exposure image xS) is performed by partially replacing a portion of one of the high output image data and the low output image data with a portion of the other of the high output image data and the low output image data. See Col. 11, Lines 19-26 and Col. 15, Lines 51-55.

Regarding **claim 22**, again the limitations of claim 1 are taught above, and Ogata teaches that the step of image-combining the high output image data and the low output image data is performed by a logarithmic addition method (i.e. the high output image data and low output image data is normalized prior to combination), as is taught in Col. 15, Lines 3-18.

In regard to **claim 26**, the limitations of claim 5 are taught above, and Ogata discloses that image-combining the high output image data (i.e. long-time exposure image xL) and the low output image data (i.e. short-time exposure image xS) is performed by partially replacing a portion of one of the high output image data and the low output image data with a portion of the other of the high output image data and the low output image data. See Col. 11, Lines 19-26 and Col. 15, Lines 51-55.

Finally, considering **claim 27**, again the limitations of claim 5 are taught above, and Ogata teaches that image-combining the high output image data and the low output image data is performed by a logarithmic addition method (i.e. the high output image data and low output image data is normalized prior to combination), as is taught in Col. 15, Lines 3-18.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18-20 and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogata et al. (U.S. Pat. 7,202,892) in view of Tintera (U.S. Pat. 5,745,808).

Next, regarding **claim 18**, the limitations of claim 1 are set forth above, and while Ogata does teach that the total gain (set factor cE) is predetermined and dependent upon the scene (See Col. 15, Line 46 – Col. 16, Line 8), Ogata fails to teach that the total gain depends on a scene classification selected from a group of predetermined scene classifications. However, noting the Tintera reference, Tintera teaches a total gain (gain factors or steps) that depends on a scene classification (i.e. auto mode, sports mode, etc.) selected from a group of predetermined scene classification. Please refer to Figs. 3A-3B, Col. 5, Lines 54-58, and Col. 6, Lines 39-56. It would have been obvious to one of ordinary skill in the art to combine the choosing of the total gain dependent upon a predetermined scene classification, as taught by Tintera, with the total gain setting of Ogata. One would have been motivated to do so because, as Tintera teaches in Col. 3, Lines 24-28, using different tables involving exposure time and gain settings for different scene classifications insures optimum image quality for the different types of scenes while minimizing the size of memory needed to store the tables.

As for **claim 19**, the limitations of claim 18 are taught above, and the Tintera reference discloses that the scene classification is determined based on data detected by one or more sensors (i.e. image sensor 10) sensing the scene, as disclosed in Col. 6, Lines 48-60.

Art Unit: 2622

Considering **claim 20**, again the limitations of claim 18 are set forth above, and Tintera also teaches that the scene classification (i.e. sports mode, landscape mode, etc.) is determined based on a selection of a scene classification by a user. See Col. 6, Lines 42-45.

Regarding **claim 23**, the limitations of claim 5 are set forth above, and while Ogata does teach that the total gain (set factor cE) is predetermined and dependent upon the scene (See Col. 15, Line 46 – Col. 16, Line 8), Ogata fails to teach that the total gain depends on a scene classification selected from a group of predetermined scene classifications. However, noting the Tintera reference, Tintera teaches a total gain (gain factors or steps) that depends on a scene classification (i.e. auto mode, sports mode, etc.) selected from a group of predetermined scene classification. Please refer to Figs. 3A-3B, Col. 5, Lines 54-58, and Col. 6, Lines 39-56.

As for **claim 24**, the limitations of claim 23 are taught above, and the Tintera reference discloses that the scene classification is determined based on data detected by one or more sensors (i.e. image sensor 10) sensing the scene, as disclosed in Col. 6, Lines 48-60.

Finally, considering **claim 25**, again the limitations of claim 23 are set forth above, and Tintera also teaches that the scene classification (i.e. sports mode, landscape mode, etc.) is determined based on a selection of a scene classification by a user. See Col. 6, Lines 42-45.

Allowable Subject Matter

Claims 3, 4, 7, and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

First, in regard to **claim 3**, the prior art fails to teach or fairly suggest an image combination method wherein the range that the high output image data exceeds a certain range is the range that the total gain (p) exceeds a value represented by $[(\text{arbitrary numeral "alpha"} - \text{coefficient "k"}) \times (\text{high output image data after gamma correction "high"/threshold "th"})]$, or $[(\text{alpha} - k) \times (\text{high/th})]$.

As for **claim 4**, the limitations of claim 3 are taught above, and therefore claim 4 would be allowable based on dependence from claim 4. Further, the prior art fails to teach or fairly suggest that the total gain $p=0.8$ for high contrast scenes, $p=0.86$ for cloudy or shady scenes, and $p=0.9$ for indoor scenes under fluorescent lamp illumination.

Considering **claim 7**, the prior art again fails to teach or fairly suggest an image combination method wherein the range that the high output image data exceeds a certain range is the range that the total gain (p) exceeds a value represented by $[(\text{arbitrary numeral "alpha"} - \text{coefficient "k"}) \times (\text{high output image data after gamma correction "high"/threshold "th"})]$, or $[(\text{alpha} - k) \times (\text{high/th})]$.

Finally, in regard to **claim 8**, the limitations of claim 7 are taught above, and therefore claim 8 would be allowable based on dependence from claim 7. Further, the prior art again fails to teach or fairly suggest that the total gain $p=0.8$ for high contrast scenes, $p=0.86$ for cloudy or shady scenes, and $p=0.9$ for indoor scenes under fluorescent lamp illumination.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory V. Madden whose telephone number is 571-272-8128. The examiner can normally be reached on Mon.-Fri. 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc Yen Vu can be reached on 571-272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2622

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gregory Madden
October 26, 2007


NGOC-YEN VU
SUPERVISORY PATENT EXAMINER